CLAIMS

1. A method for generating cold and heat by magnetic effect through at least one heat exchanger, characterized in that a first heat-transmitting fluid circulates through a first circuit (17a) called the hot circuit connected to a first compartment (12) in an enclosure (11) containing a rotating element (15), and a second heat-transmitting fluid circulates in a second circuit (17b) called the cold circuit connected to a second compartment (13) in said enclosure (11), said compartments being juxtaposed and separated by a partition (14), said enclosure (11) being associated with magnetic elements (16) for generating a magnetic field in said first compartment (12), at least in the area corresponding to said rotating element (15), and said rotating element (15) comprising at least one magneto-calorific material which undergoes a temperature increase when it passes through said first compartment (12) subjected to the magnetic field and cools when it passes through said second compartment (13) that is not subjected to the magnetic field, in that heat is extracted from said fist circuit (17a) using a first heat exchanger (18) located in said circuit (17a), said first exchanger being connected to a heat utility circuit (19), and in that cold is extracted from said second circuit (17b) using a second heat exchanger (21) located in said circuit (17b), said second exchanger being connected to a cold utility circuit (21).
2. A method according to claim 1 characterized in that the first and second heat-transmitting fluids are circulated through the compartments (12, 13) in the enclosure (11).
3. A method according to claim 2 characterized in that the first and second heat-transmitting fluids are in the liquid or gas state.
4. A method according to claim 1 characterized by reversing the position of the magnetic elements (16) relative to the compartments (12, 13) in the enclosure to arbitrarily generate cold and heat in one of these compartments.

5. A device for generating cold and heat by means of magneto-calorific effect, characterized in that it comprises:
   - an enclosure (11) divided into a first and second compartment (12, 13) that are juxtaposed and separated by a partition (14), said enclosure (11) containing a rotating element (15) that is transverse in relation to the compartments (12, 13) and turning on a axle located in the plane of the partition (14) so that it is simultaneously partially inside said first and second compartments (12, 13);
   - a first circuit (17a) called the hot circuit connected to said first compartment (12) of said enclosure (11) and comprising a first heat exchanger (18) through which there circulates a first heat-transmitting fluid, said first exchanger being connected to a heat utility circuit (19);
   - a second circuit (17b) called the cold circuit connected to said second compartment (13) of said enclosure (11) and comprising a second heat exchanger (21) through which there circulates a second heat-transmitting fluid, said second exchanger being connected to a cold utility circuit (22); and
   - magnetic elements (16) for generating a magnetic field in said first compartment (12), at least in the area corresponding to said rotating element (15), said rotating element comprising at least one magneto-calorific material which undergoes a temperature increase when it passes through the first compartment (12) subjected to the magnetic field and cools down when it passes through the second compartment (13) that is not subjected to the magnetic field.
6. A device according to claim 5 characterized in that said magnetic elements (16) comprise permanent magnets.
7. A device according to claim 5 characterized in that said magnetic elements (16) comprise electromagnets.

8. A device according to claim 5 characterized in that said magnetic elements (16) are designed to generate a variable magnetic field.
9. A device according to claim 5 characterized in that it comprises complementary magnetic elements (16a) to create an insulating magnetic field insulating the second compartment (13) from the magnetic field generated by said magnetic elements (16).
10. A device according to claim 5 characterized in that said magnetic elements (16) are movable so they can be located either in a first position (P_1) wherein they generate a magnetic field in one of said compartments (12, 13) or in a second position (P_2) wherein they generate a magnetic field in the other of said compartments (12, 13).
11. A device according to claim 7 characterized in that said magnetic elements (16) comprise first electromagnets for creating a magnetic field in said first compartment (12), second electromagnets for creating a magnetic field in said second compartment (13) and control means for respectively actuating the first or the second electromagnets.
12. A device according to claim 5 characterized in that the first and second heat exchangers (18, 21) are selected from the group consisting of liquid-liquid, liquid-gas, and gas-gas heat exchangers.
13. A device according to claim 5 characterized in that the first circuit (17a) comprises a first pump (19), in that the second circuit (17b) comprises a second pump (22) and in that the pumps are designed to make the first and second heat-transmitting fluids circulate respectively through each of the compartments (12, 13).
14. A device according to claim 5 characterized in that said rotating element (15) comprises a system of traversing passageways (25), said passageways allowing the first and second heat-transmitting fluids to circulate inside the rotating element.

15. A device according to claim 14 characterized in that said rotating element (15) comprises a unit of stacked discs (30) made of different magneto-calorific materials, each disc comprising a system of passageways (25) communicating with the passageways in the adjacent disc or discs.

16. A device according to claim 14 characterized in that said rotating element (15) comprises a system of hollow overlapping cylindrical elements (40) made of different magneto-calorific materials, each cylindrical element (40) comprising a system of traversing passageways (25).

17. A device according to claim 14 characterized in that said rotating element (15) comprises a system of nested angular sectors (50) made of different magneto-calorific materials, said angular sectors (50) being insulated from one another by means of thermally insulating elements (26), and each angular sector comprising a system of traversing passageways (25).

18. A device according to claim 14 characterized in that said rotating element (15) consists of a single cylindrical element made of magneto-calorific material, said cylindrical element comprising a system of passageways (25) opening onto its two surfaces.

19. A device according to claim 14 characterized in that said rotating element (15) comprises walled angular sectors (60) containing generally spherical grains (27) consisting of at least one magneto-calorific material, and in that the traversing passageways (25) are defined by interstices formed between the grains (27).

20. A device according to claim 14 characterized in that said traversing passageways (25) are formed of an alveolar structure.

21. A device according to claim 14 characterized in that said traversing passageways (25) are formed of hollow tubes disposed along the axle of the rotating element (15).

22. A device according to claim 14 characterized in that said traversing passageways (25) are formed of a porous structure.

23. A method of generating cold and heat by magneto-calorific effect through at least one heat exchanger, characterized in that a first heat-transmitting fluid is circulated through a first circuit (17a) called the hot circuit, connected to a first compartment (12) in an enclosure (11) containing a rotating element (15) and a second heat-transmitting fluid through a second circuit (17b) called the cold circuit, connected to a second compartment (13) of said enclosure (11), said compartments being juxtaposed and separated by a partition (14), said enclosure (11) being associated with magnetic elements (16) for generating a magnetic field in said first compartment (12), at least in the area corresponding to said rotating element (15), and said rotating element (15) comprising at least one superconductive material which undergoes a temperature increase when it passes through said first compartment (12) subjected to the magnetic field and cools down when it passes through said second compartment (13) that is not subjected to the magnetic field, in that heat is extracted from said first circuit (17a) using a first heat exchanger (18) located on said circuit (17a), said first exchanger being connected to a heat utility circuit (19), and in that cold is extracted from said second circuit (17b) using a second heat exchanger (21) located on said circuit (17b), said second exchanger being connected to a cold utility circuit (21).